CLAIMS

1. A mammalian, ~~preferably human~~, isolated or recombinant nucleic acid comprising a contiguous nucleic acid sequence encoding a vitamin D receptor related (VDRR) polypeptide.

2. An isolated or recombinant DNA/nucleic acid according to Fig. 1 or Fig. 7 or alleles thereof encoding a new VDRR polypeptide.

3. The nucleic acid according to claim 1 or claim 2 encoding the VDRR polypeptide containing a DNA-binding domain (DBD) comprising about 77 amino acids with 9 cysteine residues,, wherein said DBD is characterized by the following amino acid sequence similarity:

(i) at least 60% amino acid sequence similarity with the DBD of hVDR; and

(ii) at least 65% amino acid sequence similarity with the DBD of xONR1.

4. The nucleic acid according to claim 3, wherein said DBD ~~is characterized by~~ comprises the following amino acid sequence similarity:

(i) about 65% amino acid sequence similarity with the DBD of hVDR; and

(ii) about 71% amino acid sequence similarity with the DBD of xONR1.

5 . The nucleic acid according to any previous claim, encoding the VDRR polypeptide, wherein the ligand-binding domain (LBD) of said polypeptide is characterized by the following amino acid sequence similarity, relative to the LBDs of hVDR and xONR1, respectively:

(i) at least about 30% amino acid sequence similarity with the LBD of hVDR; and

(ii) at least about 40% amino acid sequence similarity with the LBD of xONR1.

6. The nucleic acid according to claim 5, wherein said LBD ~~is characterized by~~ comprises the following amino acid sequence similarity:

(i) at least 35% amino acid sequence similarity with the LBD of hVDR; and

(ii) at least 45% amino acid sequence similarity with the LBD of xONR1.

7. The nucleic acid according to claim 6, wherein said LBD ~~is characterized by~~ comprises the following amino acid sequence similarity:

(i) about 42% amino acid sequence similarity with the LBD of hVDR; and

(ii) about 54% amino acid sequence similarity with the LBD of xONR1.

8. The nucleic acid according ~~to any previous claim,~~ claim 1 wherein said nucleic acid sequence is that given in Fig. 1 (SEQ ID NO:1) or Fig. 7 (SEQ ID NO:3) or alleles thereof.

9. The nucleic acid according to claim 8, wherein said nucleic acid sequence is the same or substantially the same as that given in Fig. 1 (SEQ ID NO:1) or Fig. 7 (SEQ ID NO:3).

10. A nucleic acid probe for the detection of a nucleic acid sequence encoding a VDRR polypeptide in a sample.

11. The nucleic acid probe according to claim 10, wherein said probe comprises at least 14 contiguous nucleotides of the nucleic acid sequence given in Fig. 1 (SEQ ID NO:1) or Fig. 7 (SEQ ID NO:3).

12. A method for identifying clones encoding a VDRR polypeptide, said method comprising screening a genomic or cDNA library with a nucleic acid probe according to claim 10 ~~or 11~~ under low stringency hybridization conditions, and identifying those clones which display a substantial degree of hybridization to said probe.

13. An expression vector comprising a nucleic acid according to ~~any of claims 1-9~~ claim 1.

14. A cell containing a nucleic acid according to ~~any of claims 1-9~~ claim 1.

15. A cell containing an expression vector according to claim 14.

16. A process for recombinant production of a VDRR polypeptide, said process comprising expressing the nucleic acid of ~~any of claims 1 to 9~~ claim 1 in a suitable host cell.

17. The process according to claim 16, wherein the host cell is eukaryotic.

18. An isolated or recombinant mammalian, ~~preferably human,~~ VDRR polypeptide.

19. The isolated or recombinant VDRR polypeptide according to claim 18 comprising the amino acid sequence substantially the same or the same as given in Fig. 4 or Fig. 8. (SEQ ID NO:2) (SEQ ID NO:4)

20. A method to produce specific monoclonal and polyclonal antibodies to the polypeptide according to any of claims 18 and 19 comprising the injection of the protein to a mammalian.

21. A pharmaceutical formulation comprising an isolated or recombinant VDRR polypeptide according to any of claim 18 and 19, and one or more therapeutically acceptable excipients.

22. A method for identifying a ligand to a VDRR according to any of claim 18 and 19, by a cell-based reporter assay, transgenic-animal reporter assay or *in vitro*-binding assay.

23. A method for identifying a substance for treatment of a condition affected by a VDRR polypeptide according to any of claim 18 and 19, comprising screening for an agonist or an antagonist of VDRR polypeptide signal transduction to be used for treating metabolic, proliferative or inflammatory condi-tions.

24. A mammalian, preferably human, VDRR polypeptide according to any of claim 18 and 19 for use as a medicament.

25. Use of a substance affecting VDRR, according to any of claim 18 and 19, signal transduction, such as an agonist or an antagonist of VDRR polypeptide signal transduction, for the manufacture of a medicament for treating metabolic, proliferative or inflammatory conditions.

26. Use of a substance affecting VDRR, according to any of claim 18 and 19, signal transduction for the manufacture of a medicament for treating obesity, diabetes, anorexia, lipoprotein defects, hyperlipidemia, hypercholesteremia or hyperlipoproteinemia.

27. Use of a substance affecting VDRR, according to any of claim 18 and 19, signal transduction for the manufacture of a medicament for treating osteoporosis, rheumatoid artritis, benign and malign tumors, hyperproliferative skin disorders or hyperparathyroidism.

28. Use according to any of claims 25-27, wherein the substance affecting VDRR signal transduction is a chemical molecule of natural or synthetic origin with a molecular weight in the range of from about 100 up to about 500 Da, preferably with a molecular weight of about 300 Da.

29. A method for treating metabolic, proliferative or inflammatory conditions comprising introducing into a mammal a nucleic acid vector according to claim 13 encoding for expression of a VDRR polypeptide, wherein ~~polypeptide and wherein~~ said nucleic acid vector is capable of transforming a cell *in vivo* and expressing said polypeptide in said transformed cell.

30. A method for treatment of a metabolic, proliferative or inflammatory condition by administration of a therapeutically effective amount of a substance affecting VDRR, according to any of claim 18 and 19, signal transduction.

31. The method according to claim 30, wherein the substance affecting VDRR signal transduction is a chemical molecule of natural or synthetic origin with a molecular weight in the range of from about 100 up to about 500 Da, preferably with a molecular weight of about 300 Da.